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Public Health
Seattle & King County

Health Update: King County Influenza Activity - 30 March, 2015

As of 3/30/2015, influenza activity had returned to baseline levels for two consecutive weeks in King County. The 2014-15 influenza season was more severe than the past four flu seasons, with a record number of reported laboratory-confirmed influenza deaths and influenza outbreaks in long-term care facilities (LTCFs). As defined by rises from baseline across multiple influenza activity indicators, the onset of the 2014-15 season occurred in the last week of November 2014. Peak influenza activity based on emergency department (ED) influenza-like illness (ILI) and laboratory reporting occurred from late December through January, which was similar to the past two influenza seasons. The predominant strain was influenza A (H3N2) compared with A (H1N1) in 2013-14.

Because most persons with severe influenza-related illness are not tested for influenza, routine surveillance data is most useful for tracking trends and unusual disease patterns and not as an indicator of the total number of influenza-related deaths or influenza infections. Special studies are done in representative communities nationally to determine hospitalization and death rates from influenza.

- **Influenza deaths**: A total of 34 laboratory-confirmed influenza-related deaths have been reported in King County; this is higher than in any of the past five seasons (including the 2009-10 pandemic season), where number of deaths reported has ranged from 7 to 24. Forty-one percent of cases were male, and 82% were aged 65 or older (range: 30 – 105 years, median: 82 years). There were no reported pediatric deaths. With the exception of one influenza B case, all cases were attributable to influenza A [6 A(H3), 27 A (not typed)]. Nearly all had severe underlying conditions, including chronic cardiac, kidney and respiratory disorders, and diabetes, and 59% had no evidence of influenza vaccine for this season. Estimates have indicated that between 65-256 influenza deaths are likely to occur in King County each flu season, but many go undiagnosed or unreported; during the 2014-15 flu season, it is likely that total influenza-attributable deaths were at the upper end of this range.
- **Outbreaks in long-term care facilities (LTCF)**: Sixty-three outbreaks were reported from 59 LTCF, all of which identified at least one laboratory-confirmed case of influenza. This was higher than in any of the past five flu seasons, where number of LTCF outbreaks reported has ranged from 7 to 55. One third of this season's LTCF outbreaks were reported during the first week of January, during peak activity. Seventeen LTCF outbreaks resulted in one or more deaths.
- **Laboratory**: King County Public Health Laboratory tested a total of 223 specimens contributed by sentinel influenza providers, 31% of which were positive for influenza. Of the 70 positive specimens, 62 (89%) were typed as A (H3), 4 (6%) were A (not typed), and 4 (6%) were influenza B.

- **Syndromic surveillance**: The peak volume of ED visits for ILI was approximately 5.4% - higher than that observed in the past five years, excluding the pandemic H1N1 period. Peak activity occurred during the last few weeks of December 2014. ED volume was highest among pediatric age groups with peak visit levels at approximately 20% among children aged 2 to 4 years old and 15% among infants under 2 years old.
- **Influenza vaccine effectiveness**: The National Vaccine Effectiveness (VE) Network estimate (data through Jan. 30th 2015) for influenza A H3N2 viruses was 18% (95% CI: 6%-29%), and for influenza B was 45% (95% CI: 14%-65%). Across all strains, the combined vaccine effectiveness is estimated at 19% (95% CI: 7%-29%). Reduced protection against H3N2 viruses this season has been attributed to the fact that more than two-thirds of circulating H3N2 viruses are drifted from the H3N2 vaccine virus recommended for vaccine production. The proportion of drifted viruses at the U.S. VE study sites was even higher (>80%).

Figure 1. Epidemiologic curve of laboratory-confirmed influenza deaths in King County, 2014-2015, by age category.

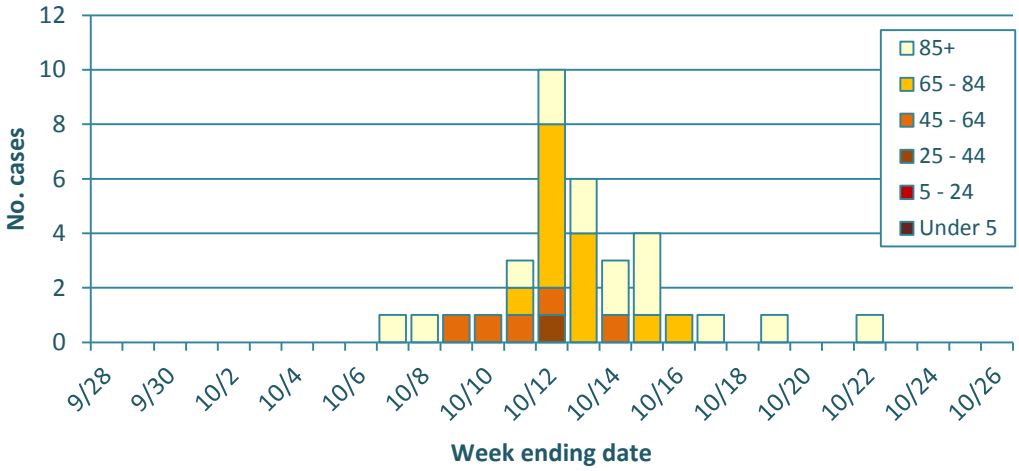
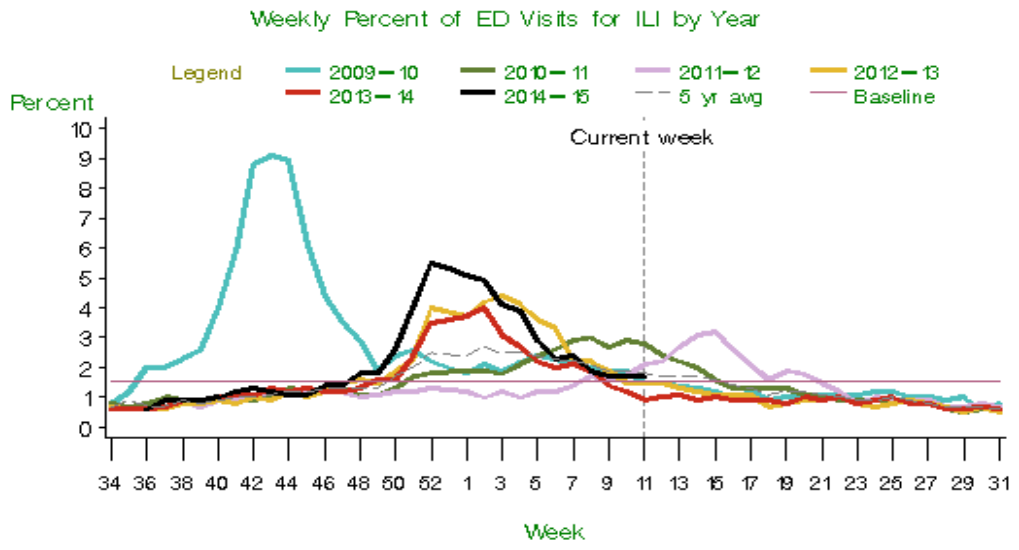


Figure 2. Syndromic surveillance: weekly percent of ED visit for ILI.



Note: 5 yr avg excludes the current season and the 2009 H1N1 pandemic period
Last updated Mar 22, 2015 ; 'current week' is week ending Mar 21, 2015
Baseline: Mean % ILI during non–flu weeks for previous three seasons, adding two standard deviations.
Using rapid antigen data, a non–flu week is a period of 2+ consecutive weeks where each one accounted for <2% of the season's total number of specimens that tested positive for influenza.

For more information

- King County Influenza Surveillance
- CDC Flu Activity and Surveillance
- Influenza vaccine effectiveness information